February 2013, Issue 18

Army Industrial Hygiene News and Regulatory Summary

Hazardous Substances

U.S. GHS to bring changes to labeling, classification of hazardous chemicals

Soldiers and Civilians who handle hazardous chemicals as part of their job will soon begin training for changes coming to the labeling and classification of chemicals in the workplace.
The Globally Harmonized System, a United Nations initiative recently adopted by OSHA, will standardize the way chemical-based hazards are communicated to workers, primarily through labeling and safety data sheets.

Integration of the GHS at Army locations will be completed through several phases, training being the first. Leaders and managers will have until Dec. 1, 2013, to ensure their Soldiers and employees are trained to standard on new label elements and safety data sheet format. Implementation of all GHS requirements must be completed by June 1, 2016.

The USACR/Safety Center has developed several GHS awareness tools, including a training support package, to assist with the transition. The package contains a lesson plan, training presentation, supporting reference materials and train-the-trainer video for use in GHS training sessions.

Read more:
https://safety.army.mil/LinkClick.aspx?fileticket=vxRL-Ro4cKU%3d&tabid=2389

Special Interest Articles:

DOEHRS Super Star

Contents:

Winter Weather Poses Carbon Monoxide Hazards for Workers

With the arrival of cold weather, OSHA is reminding employers to take necessary precautions to protect workers from the serious, and sometimes fatal, effects of carbon monoxide exposure.

Every year, workers die from carbon monoxide poisoning, usually while using fuel-burning equipment and tools in buildings or semi-enclosed spaces without adequate ventilation. This can be especially true during the winter months when workers use this type of equipment in indoor spaces that have been sealed tightly to block out cold temperatures and wind. Symptoms of carbon monoxide exposure can include everything from headaches, dizziness and drowsiness to nausea, vomiting or tightness across the chest.

To reduce the risk of carbon monoxide poisoning in the workplace, employers should install an effective ventilation system, avoid the use of fuel-burning equipment in enclosed or partially-enclosed spaces, use carbon monoxide detectors in areas where the hazard is a concern and take other precautions outlined in OSHA's Carbon Monoxide Fact Sheet.

Read more:
http://www.osha.gov/as/opa/quicktakes/qt02012013.html#4

California Intends To Declare BPA A Reproductive Health Hazard

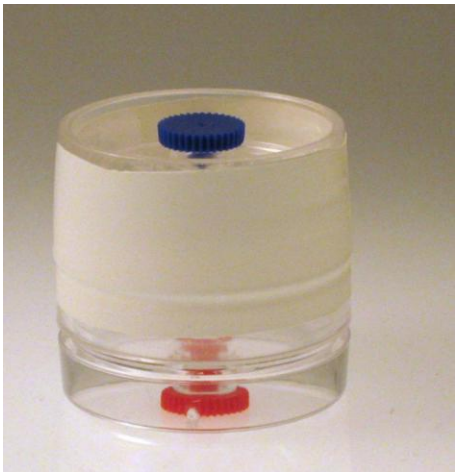
California announced its intent to declare bisphenol A a reproductive hazard. Under a state law known as Prop. 65, warning signs would be required for consumer items that contain a certain high level of BPA. BPA is used to make polycarbonate plastic, and also is found in liners of food and beverage cans and some thermal receipts.

Scientists say BPA is an estrogen-like substance that can alter reproductive hormones. California's Office of Environmental Health Hazard Assessment said it based its decision to list BPA as a Prop. 65 chemical on a 2008 report by the National Toxicology Program.

Read more:
http://www.scientificamerican.com/article.cfm?id=california-intends-to-declare-bpa-a-reproductive-health-hazard

Closed-Face Filter Cassette (CFC) Sampling

The sampling and analytical methods published in the NIOSH Manual of Analytical Methods (NMAM)(1) represent state-of-the-art methods for assessing worker exposures to toxic chemicals. Aerosol sampling methods generally specify the collection of workplace air samples using samplers containing filters such as 37-mm closedface cassettes (CFCs). NIOSH considers that all particles entering CFCs, as well some other samplers, such as the Institute of Occupational Medicine (IOM)



sampler, should be included as part of the sample whether they deposit on the filter or the inside surfaces of the sampler. This matter has been discussed in detail in section on "Sampler Wall Losses" of NMAM Chapter O(2) and has also been specifically addressed in a gravimetric method promulgated by the Occupational Safety and Health Administration (OSHA).

The most accurate measure of occupational exposures therefore includes all aerosol particles entering workplace air samplers, both for gravimetric analysis and for analytes such as metals and metalloids. Hence, following sampling, i.e., during sample preparation and analysis, procedures should be used to account for material adhering to the internal surfaces of air sampling cassettes.

Read more: Journal of Occupational and Environmental Hygiene Volume 10, Issue 3, 2013 (Available with AIHA membership)

Evaluation of Air Sampling Methods for Abrasive Blasting

The National Institute for Occupational Safety and Health (NIOSH) investigators compared methods for collecting personal breathing zone (PBZ) air samples for particulates during abrasive blasting at a shipyard. Abrasive blasting is the cleaning finishing of surfaces by the use of an abrasive carried in a strong current of air.

The U.S. government has provided regulatory requirements and guidelines for ventilation, enclosures, and personal protective equipment during abrasive blasting.(1,2)

However, current Occupational Safety and Health Administration (OSHA) sampling and analytical methods can overestimate worker exposures to airborne metals and other particulate contaminants during abrasive blasting.(3–5)

Shielding the 37-mm filter cassette inlet to exclude non-inhalable particles, mounting the PBZ air sampler behind the employee's head to protect the sampler from rebounding abrasive materials, and using the Institute of Medicine (IOM) inhalable dust sampler have been proposed as alternatives to assess exposure. All were impractical or ineffective in abrasive blasting environments. (3,4)

Sampling simultaneously inside and outside the employees' abrasive blast hood has shown that lower air concentrations inside the abrasive blast hood produce less overloading of the 37-mm cassettes;(4) however, sampling inside PPE is not accepted by OSHA for compliance purposes. (2,5)

Read more: Journal of Occupational and Environmental Hygiene Volume 10, Issue 3, 2013 (Available with AIHA membership

Scientists Solve Mercury Mystery, Taking Big Step Toward Protecting Human Health

By identifying two genes required for transforming inorganic into organic mercury, which is far more toxic, scientists have just taken a significant step toward protecting human health. The question of how methylmercury, an organic form of mercury, is produced by natural processes in the environment has stumped scientists for decades, but a team led by researchers at Oak Ridge National Laboratory has solved the puzzle. Results of the study, published in the journal *Science*, provide the genetic basis for this process, known as microbial mercury methylation, and have far-reaching implications.

Read more:
http://www.sciencedaily.com/releases/2013/02/130207141450.htm

Radiation

Evaluation of Radon Levels at a U.S. Government Facility

HHE program investigators evaluated employee exposures to naturally occurring radon inside a government building. Investigators found that radon concentrations outdoors and in the

occupied work area were below the Occupational Safety and Health Administration and Environmental Protection Agency exposure limits. Radon concentrations in the building's basement, which is typically unoccupied, were higher than in the work area or outdoors. Investigators recommended that the employer:

- Minimize the amount of time employees spend in the basement.
- Consider installing a ventilation system in the basement to remove radon if the space is ever used as an occupied work area.

Read more:
http://www.cdc.gov/niosh/enews/enewsV10N10.html#hhe

Mix Uranium from Russian Nuclear Weapons with Norwegian Rock, Less Radioactive Waste

The USA uses uranium from Russian nuclear weapons as fuel in its civilian nuclear power plants. If the weapon-grade uranium is mixed with the Norwegian element thorium, the waste becomes 95 per cent less radioactive.

Thanks to the 1994 disarmament agreement between Russia and the USA, 500 tonnes of highly enriched weapon-grade uranium from 20,000 nuclear weapons have been used as fuel in American nuclear power plants. This is equivalent to ten per cent of the total American electricity consumption in the past twenty years.

Read more:
http://www.sciencedaily.com/releases/2013/02/130212075212.htm

Wastewater from Fracking Is Often Highly Radioactive

New studies have found that waste from fracking operations can be highly radioactive. A geological survey reported that millions of barrels of wastewater from unconventional wells in Pennsylvania and conventional wells in New York are 3,609

times more radioactive than the federal limit for drinking water, and 300 times more radioactive than a Nuclear Regulatory Commission limit for nuclear plant discharges.

Different studies by the U.S. Geological Survey (USGS), Penn State University, and other groups found that waste from fracking can be highly radioactive.
A study by Penn State's Department of Geosciences found that wastewater from fracking contains high levels of radium and barium.

Read more:
http://www.homelandsecuritynewswire.com/dr20130205-wastewater-from-fracking-is-often-highly-radioactive

Ventilation

New Device Better Traps Viruses, Airborne Pathogens

Washington University engineering researchers have created a new type of air-cleaning technology that could better protect human lungs from allergens, airborne viruses and ultrafine particles in the air.

The device, known as the SXC ESP, was created by a Professor and chair of the Department of Energy, Environmental & Chemical Engineering in the School of Engineering & Applied Science.

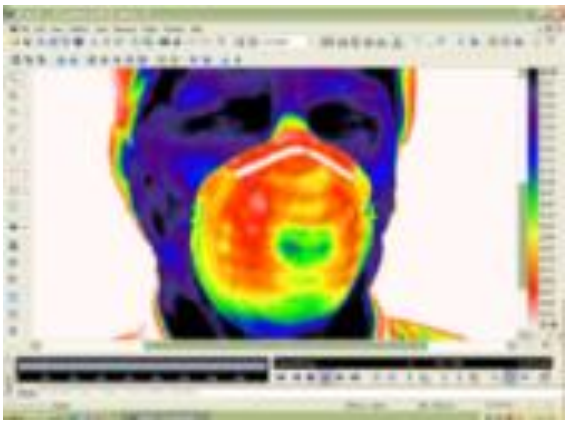
A recent study of the device, published in *Applied and Environmental Microbiology*, found that it could help to prevent respiratory and viral infections and inhalation-induced allergic reactions more efficiently than existing filter-based systems.

The new device incorporates soft X-ray irradiation as a component of the electrostatic precipitation process currently used to remove large particles from airflows. By incorporating the soft X-ray enhanced electrostatic precipitation technology, the researchers were able to ensure very efficient charging of the particles over a broad range of sizes and their capture in the SXC ESP.

Read more: http://www.newswise.com/articles/new-device-better-traps-viruses-airborne-pathogens

PPE

Penetration of Fiber Versus Spherical Particles Through Filter Media and Faceseal Leakage of N95 Filtering Facepiece Respirators with Cyclic Flow



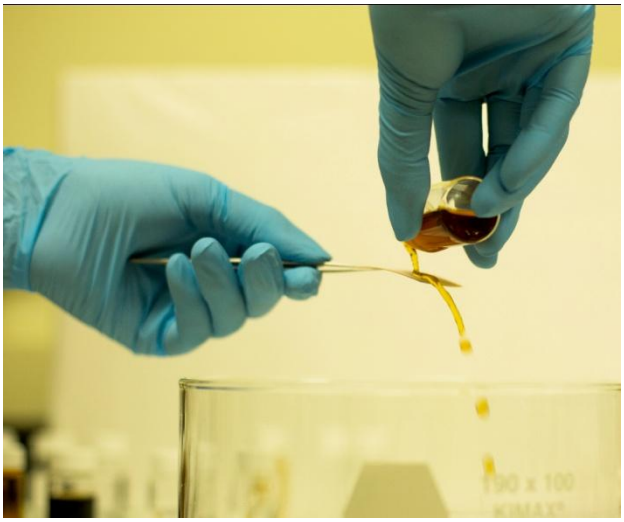
This study investigated differences in penetration between fibers and spherical particles through faceseal leakage of an N95 filtering facepiece respirator. Three cyclic breathing flows were generated corresponding to mean inspiratory flow rates (MIF) of 15, 30, and 85 L/min. Fibers had a mean diameter of 1 µm and a median length of 4.9 µm (calculated aerodynamic diameter, d_{ae} = 1.73 µm). Monodisperse polystyrene spheres with a mean physical diameter of 1.01 µm (PSI) and 1.54 µm (PSII) were used for comparison (calculated d_{ae} = 1.05 and 1.58 µm, respectively). Two optical particle counters simultaneously determined concentrations inside and outside the respirator.

This confirmed that higher penetration of PSI was not due to slightly smaller aerodynamic diameter, indicating that the shape of fibers rather than their calculated mean aerodynamic diameter is a prevailing factor on deposition mechanisms through the tested respirator. In conclusion, faceseal penetration of fibers and spherical particles decreased with increasing breathing rate, which can be explained by increased capture by impaction. Spherical particles had 2.0–2.8 times higher penetration through faceseal leaks and 1.1–1.5 higher penetration through filter media than fibers, which can be attributed to differences in interception losses.

Read more: Journal of Occupational and Environmental Hygiene Volume 10, Issue 3, 2013 (Available with AIHA membership

A Possible Answer for Protection Against Chemical/Biological Agents, Fuel Leaks, and Coffee Stains

A recent discovery funded by the Air Force Office of Scientific Research (AFOSR) may very well lead to a process that not only benefits every uniformed service member of the Department of Defense, but everyone else as well: protection from Chemical/Biological agents, to self-cleaning apparel, to effortless thermal management, to fuel purification as well as enhanced control of leaks--especially oil and fuels.



Read more:
http://www.wpafb.af.mil/news/story.asp?id=123334927

Noise

Firefighter Noise Exposure During Training Activities and General Equipment Use

Multiple noise measurements were taken on 6 types of fire station equipment and 15 types of emergency response vehicle-related equipment used by firefighters during routine and emergency operations at 10 fire stations. Five of the six types of fire station equipment, when measured at a distance of one meter and ear level, emitted noise equal to or greater than 85 dBA, including lawn maintenance equipment, snow blowers, compressors,

and emergency alarms. Thirteen of 15 types of equipment located on the fire engines emitted noise levels equal to or greater than 85 dBA, including fans, saws, alarms, and extrication equipment. In addition, noise measurements were taken during fire engine operations, including the idling vehicle, vehicle sirens, and water pumps. Results indicated that idling fire-engine noise levels were below 85 dBA; however, during water pump and siren use, noise levels exceeded 85 dBA, in some instances, at different locations around the trucks where firefighters would be stationed during emergency operations.

Read more: Journal of Occupational and Environmental Hygiene Volume 10, Issue 3, 2013 (Available with AIHA membership)

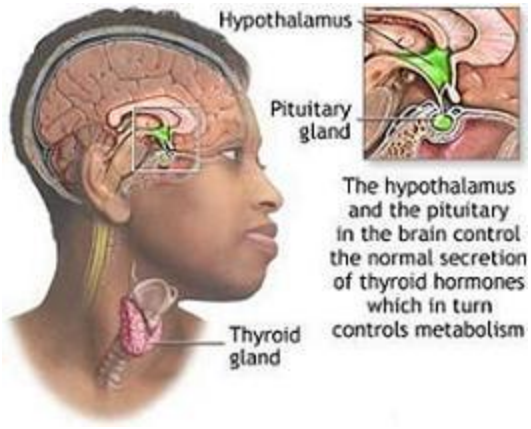
Preventive Medicine

Thyroid Hormones In Relation To Lead, Mercury, and Cadmium Exposure in the National Health and Nutrition Examination Survey, 2007–2008

Background: Heavy metals, such as lead (Pb), mercury (Hg), and cadmium (Cd), are known toxicants, but their associations with the thyroid axis have not been well quantified at U.S. background levels.

Objectives: We investigated the relationships between thyroid hormones (total and free thyroxine [TT_4 and FT_4], total and free triiodothyronine [TT_3 and FT_3], thyroid-stimulating hormone [TSH], and thyroglobulin [Tg]) and levels of Pb, Hg, and Cd in blood and Cd in urine.

Methods: We separately analyzed a sample of 1,109 adolescents (12–19 years of age) and a sample of 4,409 adults from the U.S. National Health and Nutrition Examination Survey (NHANES) 2007–2008. We estimated associations after adjusting for age, sex,



race, urinary iodine, body mass index, and serum cotinine.

Results: The geometric mean (GM) levels of blood Pb (BPb), total Hg, and Cd were 0.81 µg/dL, 0.47 µg/L, and 0.21 µg/L in adolescents and 1.43 µg/dL, 0.96 µg/L, and 0.38 µg/L in adults, respectively. The GMs of urinary Cd were 0.07 and 0.25 µg/g

creatinine in adolescents and adults, respectively. No consistent pattern of metal and thyroid hormone associations was observed in adolescents. In adults, blood Hg was inversely related to TT_4, TT_3, and FT_3 and urinary Cd was positively associated with TT_4, TT_3, FT_3, and Tg, but there were no associations with Pb. Associations were relatively weak at an individual level, with about 1–4% change in thyroid hormones per interquartile range increase in Hg or Cd.

Conclusions: Our analysis suggests an inverse association between Hg exposure and thyroid hormones, and a positive association between Cd exposure and thyroid hormones in adults.

Read more:
http://ehp.niehs.nih.gov/2013/02/1205239/

Occupational Injuries among Low-Wage Workers Pack a Big Economic Punch

For the 31 million American workers who earn a median wage below $11.19 an hour, occupational injuries and illnesses – and their economic impact – are of special concern, suggests a new policy brief from the George Washington University School of Public Health and Health Services (SPHHS). The brief was released in conjunction with a white paper that reveals injuries and illness among low-wage workers cost the nation more than $39 billion in 2010.

Read more:
http://ehstoday.com/safety/occupational-injuries-among-low-wage-workers-pack-big-economic-punch

Stress Symptoms in Midlife Predict Old-Age Disability, Study Shows

Nearly 30 % of adult workers suffer from work-related stress, and it is commonly acknowledged that stress has damaging effects on individual's health. A recently published prospective cohort study provides strong evidence that perceived work-related stress in midlife predicts functional limitations and disability later in old age.

Read more:
http://www.sciencedaily.com/releases/2013/02/130204094612.htm

Chagas Disease: Cure in Sight for Kissing Bug's Bite

Chagas disease, a deadly tropical infection caused by the protozoan parasite *Trypanosoma cruzi* and transmitted by biting insects called "kissing bugs," has begun to spread around the world, including the U.S. Yet current treatment is toxic and limited to the acute stage
In The *Journal of Infectious Diseases* (*JID*), report a cure of both the acute and chronic forms of the infection in mice with a small molecule, VNI.

Read more:
http://www.sciencedaily.com/releases/2013/02/130214092353.htm

Unchecked Antibiotic Use in Animals May Affect Global Human Health

The increasing production and use of antibiotics, about half of which is used in animal production, is mirrored by the growing number of antibiotic resistance genes, or ARGs, effectively reducing antibiotics' ability to fend off diseases -- in animals and humans.

Read more:
http://www.sciencedaily.com/releases/2013/02/130211162236.htm

Environmental Health

Hawaii-Based Marines Test Green Waste Disposal Technology

On an island world-famous for its chain of active volcanoes, Marines are harnessing extreme heat to test a process that could become the future of military waste management.

The science advisor for U.S. Marine Corps Forces Pacific, supported by the MarForPac Experimentation Center, demonstrated a green, rubbish-reducing technology.

The machine behind the magic is called MAGS (Micro Auto Gasification System), and perhaps the most impressive aspect of the technology is its simplicity.
Operators start MAGS with diesel fuel, bringing the inside of its insulated drum to temperatures exceeding 1,000 degrees Fahrenheit. The machine is then “fed” trash at a rate of approximately 50 pounds per hour, turning 95 % of it into gas which is used as fuel to sustain the process. The

remaining 5 % is converted to inert ash which can be safely disposed of in landfills, or mixed with compost, asphalt or cement. One machine is capable of meeting the daily waste disposal needs of approximately 1,000 troops.

Read more:
http://www.marforpac.marines.mil/News/NewsArticleDisplay/tabid/919/Article/137267/hawaii-based-marines-test-green-waste-disposal-technology.aspx

One in 20 Cases of Pre-Eclampsia May Be Linked to Air Pollutant

One in every 20 cases of the serious condition of pregnancy, pre-eclampsia, may be linked to increased levels of the air pollutant ozone during the first three months, suggests a large study published in the online journal *BMJ Open.*
Mothers with asthma may be more vulnerable, the findings indicate.
Pre-eclampsia is characterised by raised blood pressure and the presence of protein in the urine during pregnancy. It can cause serious complications, if left untreated.

Read more:
http://www.sciencedaily.com/releases/2013/02/130206185852.htm

Sunset for Leaded Aviation Gasoline?

Leaded aviation gasoline (avgas) is one of the few fuels in the United States to still contain lead, and it's the single largest source of lead emissions in the country. An appropriate replacement fuel has remained surprisingly elusive, but the search for a replacement got a boost in 2012, when a committee of the Federal Aviation Administration issued recommendations and criteria for identifying and approving an unleaded avgas.

Read more:
http://ehp.niehs.nih.gov/2013/02/121-a54/

EPA's 2011 TRI Shows Air Pollutants Continue to Decline

Total toxic air releases in 2011 declined 8 % from 2010, mostly because of decreases in hazardous air pollutant (HAP) emissions, even while total releases of toxic chemicals increased for the second year in a row, according to the EPA annual Toxics Release Inventory (TRI) report.

The annual Toxics Release Inventory (TRI) provides the public with vital information about chemicals in our communities. The TRI program collects information on certain toxic chemical releases to the air, water and land, as well as information on waste management and pollution prevention activities by facilities across the country. TRI data are submitted annually to EPA, states and tribes by facilities in industry sectors such as manufacturing, metal mining, electric utilities and commercial hazardous waste facilities

Read more:
http://ehstoday.com/environment/epa-s-2011-tri-shows-air-pollutants-continue-decline

Ergonomics

Virtual Vehicle Vibrations: Predicting Role of Posture in Traffic Collision Injuries

"Sit up straight in your chair!"That command given by countless parents to their children may one day be delivered by vehicle designers to a robot that is actually a computerized model of a long-distance truck driver or other heavy equipment operator, thanks to a University of Iowa research program.

That's because a UI researcher has designed a computer program that allows engineers to accurately predict the role posture plays

in transferring the stress of vehicle motion to bone and muscle in the head and neck.

Read more:
http://www.sciencedaily.com/releases/2013/02/130211162456.htm

Workplace Stretching Programs: Do They Work and Are They Worth the Cost?

Injuries are a source of concern for any type of business. Injuries not only cause pain and suffering for employees, they also have direct and indirect (hidden) costs. These hidden costs are reflected in the time lost for an employee who is not available to accomplish his tasks, as well as the cost of training replacement workers and increased insurance costs.

On average, $5 is spent for every $1 of medical expense on a typical injury. One type of injury that is subject to high costs is strains or soft tissue injuries, sometimes called musculoskeletal disorders. Musculoskeletal disorders and injuries frequently are difficult to diagnose, and it often is difficult to recognize the hazards that cause them. Hazards in the workplace can be controlled by several methods; usually engineering controls, where the hazard is designed out, is the first choice.

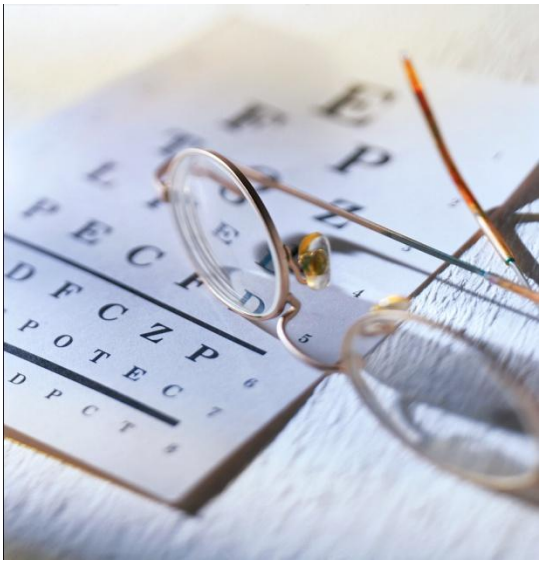
The second choice is an administrative control, where the use of policies, procedures and job assignment rotation can be used to eliminate the hazard. The last option for eliminating injuries is centered on the worker, whether it's providing task-specific personal protective equipment or providing training in the form of stretching and flexibility exercise programs.

Read more:
http://ehstoday.com/health/workplace-stretching-programs-do-they-work-and-are-they-worth-cost

Too Much Time Spent Indoors May Be Behind a Surge in Nearsightedness

Nearsightedness has increased steadily in North America and Europe in recent decades, with one-third of adults in the United States now nearsighted. That figure alone is cause for concern. But the rise of myopia in East Asia is downright alarming. Recent studies of young men in Seoul and college students in Shanghai find that more than 95 % are nearsighted. Increases also have shown up across other urban centers in the Far East.

Studies first uncovered a link between myopia and limited outdoor time during childhood just a few years ago. At the time, many researchers were taken aback. The notion that child's play might promote normal eye growth seemed almost magical.



Read more
http://www.sciencenews.org/view/feature/id/347738/description/Urban_Eyes

Safety

Safety Survey Reveals Lab Risks

Questionnaire suggests researchers not as safe as they feel. Scientists may have a false sense of security about the safety of their laboratories, according to early results from the first international survey of researchers' workplace attitudes and practices.
Some 86% of the roughly 2,400 scientists who responded said that they believe their

labs are safe places to work. Yet just under half had experienced injuries ranging from animal bites to chemical inhalation, and large fractions noted frequent lone working, unreported injuries and insufficient safety training on specific hazards

Read more:
http://www.nature.com/news/safety-survey-reveals-lab-risks-1.12121

Federal Agencies Working to Make Homes Healthier / Improving Housing Quality Can Dramatically Affect the Health of Residents

Several federal agencies unveiled *Advancing Healthy Housing – A Strategy for Action*. White House Council on Environmental Quality (CEQ), EPA, HUD , Surgeon General, and Deputy Secretary of Energy Daniel Poneman discussed the new plan during an event at the National Building Museum .

The initiative represents a bold new vision for addressing the nation's health and economic burdens caused by preventable hazards associated with the home. The *Strategy for Action* encourages federal agencies to take preemptive actions that will help reduce the number of American homes with health and safety hazards.

Read more:
http://yosemite.epa.gov/opa/admpress.nsf/0/3E6188A2D58E2C0F85257B08004E66DE

OSHA Issues 2013 Targeted Inspection Plan to Protect Federal Workers

OSHA has issued its annual inspection plan of federal agency establishments under its Federal Agency Targeting Inspection Program directive for fiscal year 2013. FEDTARG directs programmed inspections of federal agency establishments where a high number of workers have been absent due to on-the-job injuries.

The directive outlines the procedures for inspecting federal worksites. OSHA will inspect all establishments reporting 100 or more cases where a worker was absent due to injury during fiscal year 2012; 50 % of those establishments reporting 50 to 99 cases; and 10 % of those reporting 20 to 49 cases.

Read more:
http://www.osha.gov/as/opa/quicktakes/qt02012013.html#9

Older Bikers Three Times as Likely to Be Seriously Injured in Crashes as Younger Peers

Older bikers are up to three times as likely to be seriously injured in a crash as younger motor bike enthusiasts, indicates US research published online in *Injury Prevention.*

The findings are a cause for concern, because of the increasing popularity of motor bike ownership among older adults, and their increasing tendency to be involved in a crash, warn the authors.

Read more:
http://www.sciencedaily.com/releases/2013/02/130206185854.htm

Emergency Preparedness

Security Risks of Extreme Weather and Climate Change

Increasingly frequent extreme weather events such as droughts, floods, severe storms, and heat waves have focused the attention of climate scientists on the connections between greenhouse warming and extreme weather. Because of the potential threat to U.S. national security, a new study was conducted to explore the

forces driving extreme weather events and their impacts over the next decade, specifically with regard to their implications for national security planning. The report finds that the early ramifications of climate extremes resulting from climate change are already upon us and will continue to be felt over the next decade, directly impacting U.S. national security interests.

Read more:
http://www.sciencedaily.com/releases/2013/02/130211135015.htm

Fluorescent Label Sheds Light on Radioactive Contamination

Researchers in Japan have developed a way to detect caesium contamination on a scale of millimetres enabling the detection of small areas of radioactive contamination.

Radioactive leaks, such as at the Fukushima Daiichi nuclear plant in Japan, contaminate the local environment. Contamination of soil and water by the radioactive form of caesium is a major problem, since it persists for a long time; levels of radioactivity reduce by half only every 30 years. Effective detection and removal of radiocaesium would accelerate recovery of the environment.

Read more:
http://www.sciencedaily.com/releases/2013/02/130207141200.htm

Deployment Health

Active Duty Military Personnel Prone to Sleep Disorders

A new study found a high prevalence of sleep disorders and a startlingly high rate of short sleep duration among active duty military personnel. The study suggests the need for a cultural change toward appropriate sleep practices throughout the military.

Read more:
http://www.sciencedaily.com/releases/201 3/01/130131154408.htm

Threat Bias Interacts With Combat, Gene to Boost PTSD Risk

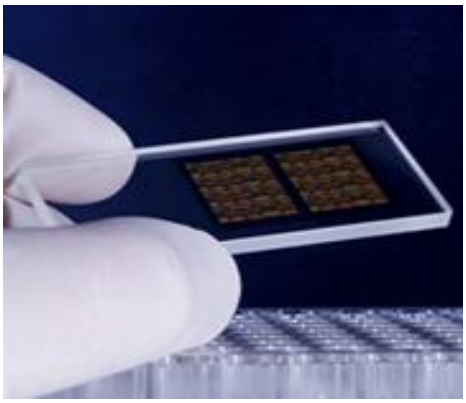
Soldiers preoccupied with threat at the time of enlistment or with avoiding it just before deployment were more likely to develop post-traumatic stress disorder (PTSD), in a study of Israeli infantrymen. Such pre-deployment threat vigilance and avoidance, interacting with combat experience and an emotion-related gene, accounted for more than a third of PTSD symptoms that emerged later, say National Institutes of Health scientists, who conducted the study in collaboration with American and Israeli colleagues.

Read more:
http://www.sciencedaily.com/releases/2013/02/130213165714.htm

Nanotechnology

ONE Nano: NIEHS's Strategic Initiative on the Health and Safety Effects of Engineered Nanomaterials

Background: The past decade has seen tremendous expansion in the production and application of engineered nanomaterials (ENMs). The unique properties that make ENMs useful in the marketplace also make their interactions with biological systems difficult to anticipate and critically important to explore. Currently, little is known about the



health effects of human exposure to these materials.

Objectives: As part of its role in supporting the National Nanotechnology Initiative, the National Institute of Environmental Health Sciences (NIEHS) has developed an integrated, strategic research program—"ONE Nano"—to increase our fundamental understanding of how ENMs interact with living systems, develop predictive models for quantifying ENM exposure and assessing ENM health impacts, and guide the design of second-generation ENMs to minimize adverse health effects.

Discussion: NIEHS's research investments in ENM health and safety include extramural grants and grantee consortia, intramural research activities, and toxicology studies being conducted by the National Toxicology Program (NTP). These efforts have enhanced collaboration within the nanotechnology research community and produced toxicological profiles for selected ENMs, as well as improved methods and protocols for conducting *in vitro* and *in vivo* studies to assess ENM health effects.

Conclusion: By drawing upon the strengths of NIEHS's intramural, extramural, and NTP programs and establishing productive partnerships with other institutes and agencies across the federal government, NIEHS's strategic ONE Nano program is working toward new advances to improve our understanding of the health impacts of engineered nanomaterials and support the goals of the National Nanotechnology Initiative.

Read more:
http://ehp.niehs.nih.gov/2013/02/1206091/

Regulatory Research & Industrial Hygiene Professional News

Congress

Bill Filed to Reform Federal Job Training

A newly filed bill named the Supporting Knowledge and Investing in Lifelong Skills Act is the vehicle Republicans on the U.S. House Education and the Workforce Committee appear ready to use to reform federal job training and employment assistance. It was filed Feb. 25 by U.S. Rep. Virginia Foxx, R-N.C., who chairs the committee's Higher Education and

Workforce Training Subcommittee, and she will chair a Feb. 26 hearing about it.

Read more:
http://ohsonline.com/articles/2013/02/25/bill-filed-to-reform-federal-job-training.aspx?admgarea=news

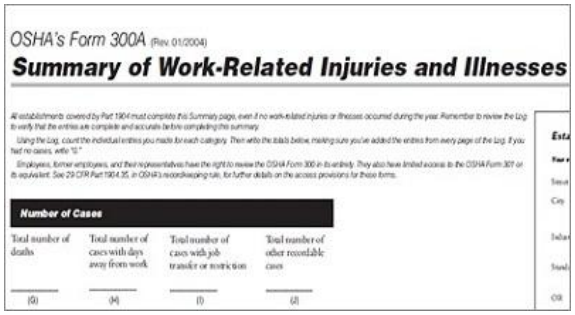
OSHA

OSHA Webpage for Clinicians

OSHA recently released a new web page that provides information, resources, and links to help clinicians navigate OSHA's web site and to aid clinicians in caring for workers. The web page is designed to serve clinicians new to occupational health and to serve occupational health providers.

Read more:
http://www.cdc.gov/niosh/enews/enewsV10N10.html#news

OSHA Reminds Employers to Post Injury/Illness Summaries


OSHA's Form 300A (Rev. 01/2004)
Summary of Work-Related Injuries and Illnesses
Number of Cases
Total number of deaths
Total number of cases with days away from work
Total number of cases with job transfer or restriction
Total number of other recordable cases

OSHA is reminding employers to post OSHA's Form 300A, which summarizes the total number of job-related injuries and illnesses that occurred during 2012 and were logged on OSHA Form 300, Log of Work-Related Injuries and Illnesses. The summary must be posted between Feb. 1 and April 30, 2013, and should be displayed in a common area where notices to employees are usually posted.

Read more:
http://www.osha.gov/as/opa/quicktakes/qt02152013.html#4

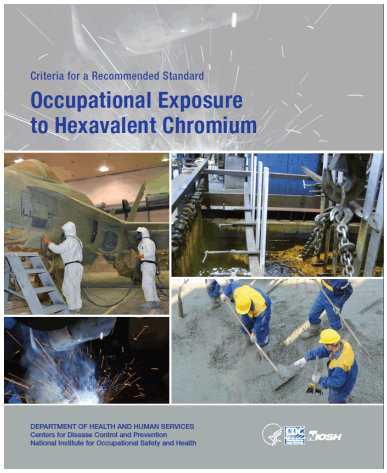
NIOSH

New NIOSH Partnership with the Center for Health Design©

Recently, NIOSH and the Center for Health Design© (CHD) signed a new partnership agreement. NIOSH and CHD will collaborate in the development of guidance documents and other materials that incorporate safety and health considerations of both patients and workers during the design and construction of healthcare facilities.

Read more:
http://www.cdc.gov/niosh/enews/enewsV10N10.html#r2p

Criteria for a Recommended Standard: Occupational Exposure to Hexavalent Chromium



In this criteria document, NIOSH reviews the critical health effects studies of hexavalent chromium (Cr[VI]) compounds in order to update its assessment of the potential health effects of occupational exposure to Cr(VI) compounds and its recommendations to prevent and control these workplace exposures. NIOSH reviews the following aspects of workplace exposure to Cr(VI) compounds: the potential for exposures (Chapter 2), analytical methods and considerations (Chapter 3), human health effects (Chapter 4), experimental studies (Chapter 5), and

quantitative risk assessments (Chapter 6). Based on evaluation of this information, NIOSH provides recommendations for a revised recommended exposure limit (REL) for Cr(VI) compounds (Chapter 7) and other recommendations for risk management (Chapter 8).

Read more:
http://www.cdc.gov/niosh/docs/2013-128/

How to become a DOEHRS-IH Super Star

- ✓ Do feel like you use DOEHRS-IH more than other program offices?
- ✓ Do you feel unnoticed?
- ✓ Do you feel like you have done great IH things with DOEHRS-IH?
- ✓ Do you wear a unitard and cape under your clothes? (Don't answer this question please)

Email the **Industrial Hygiene Training Coordinator** a brief synopsis about a new idea, a faster way, or a milestone you just met. Your Program Office just may be nominated as the monthly DOEHRS-IH ***Super Star.***

Training

This monthly summary is published by the Industrial Hygiene and Medical Safety Management Program (IHMSMP) for the U.S. Army Public Health Command.

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http://phc.amedd.army.mil/topics/workplacehealth/ih/Pages/default.aspx

Upcoming Courses

- ***Introduction to Bio-Safety Cabinets & BSL Labs*** **-** This online module is provided using Blackboard and is designed to provide participants with knowledge of equipment and procedures which is essential when working in labs that can contain potentially lethal organisms (i.e. BSL2 clinical microbiology labs, BLS3 LRN labs). This module is designed for industrial hygiene, occupational health and safety professionals.
- ***Ventilation Fans-*** This online module is designed to enhance knowledge of engineering design principals and the regulations and standards pertinent to ventilation systems, and ability to demonstrate, recommend, and apply ventilation engineering principles and related calculations to control exposures.
- ***HVAC Components and Controls-*** This online module is designed to differentiate between various types HVAC Components and Controls, how to identify criteria for use as general dilution ventilation controls, and demonstrate how to apply related calculations.
- ***Ventilation Protocols-*** This class describes Ventilation Evaluation Protocols for Spray Painting, Welding, Vehicle Exhaust, and Laboratory; identifies criteria for evaluation of ventilation controls; and demonstrates how to apply related calculations.

To view all courses visit the USAPHC portal http://phc.amedd.army.mil/Pages/Training.aspx.